UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,954	04/05/2004	Erik J. Shahoian	IMMR-0098B	2293

60140 7590 02/02/2007

IMMERSION - THELEN REID & PRIEST L.L.P
THELEN REID & PRIEST L.L.P
P.O. BOX 640640
SAN JOSE, CA 95164-0640

EXAMINER
EISEN, ALEXANDER

ART UNIT	PAPER NUMBER
2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,954	SHAHOIAN ET AL.	
	Examiner	Art Unit	
	Alexander Eisen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *46-55 and 85-113* is/are pending in the application.

4a) Of the above claim(s) *86,89-93,96,99-103,105 and 108-112* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *46-55,85,87,88,94,95,97,98,104,106 and 107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election

1. While the Applicant has agreed in part with the examiner's restriction requirement and has withdrawn claims 86, 89-93, 96, 101-103, 105 and 108-112 without traverse; claims 85, 87-88, 95, 97, 98, 104, 106, 107 and 113, in the Applicant's opinion, have to be considered on the merits because they were not restricted properly. The examiner respectfully disagrees. At least claims 104, 106, 107 and 113 are directed to the different embodiment of the invention – the embodiment differed from the one claimed by the elected claims in that an actuator is coupled to a movable portion rather than to a housing or a base – and therefore at least these claims should be also withdrawn from the prosecution. However, in order to expedite the prosecution of the application, the examiner will consider these claims on the merits in the current official action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 46-55, 85, 87, 88, 94, 95, 97 and 98 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 46, from which claims 47-55, 85, 87-88 are dependent from, and claim 94, which claims 695, 97 and 98 are dependent from,

recite: "with a sudden acceleration". There is no support for such limitations in the specification as originally filed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 46, 48-55, 94-95, 97-98, 104, 106-107 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozaka (reference of record), JP 09-026850.

With respect to claims 46 and 94, Ozaka discloses a device (mouse in FIGS. 2 and 10) comprising a housing moveable in X-Y plane; a sensor (FIG. 16, paragraph [0008]) to output a sensor signal based on the movement of the housing; an actuator 201 (FIG. 10, paragraph [0080]) coupled to the housing; and an eccentric mass 202 coupled to the actuator 201, the actuator configured to rotate the eccentric mass 202 to output inertial haptic force pulse.

While Ozaka is not explicit about "sudden acceleration" and "force pulse", it would be obvious to one of ordinary skill in the art at the time of the invention and understandable that the actuator is not rotating constantly, but only at the time when a cursor reaches certain interface objects on the screen, i.e. the feedback is delivered "suddenly" and as a pulse .

As pertaining to claim 48, the actuator (motor) 201 is configured to rotate the eccentric mass 202 in approximately in X-Y plane.

As pertaining to claim 49, the inertial force is a pulse correlated with a simulated interaction of a user controlled cursor with a graphical object displayed in a graphical user interface (see FIGS. 3-4; paragraphs [0029-31]).

As pertaining to claim 50, Ozaka further teaches that the pulse is output with a magnitude based on a characteristic of the graphical object with which the cursor interacts [0036].

As per claim 51, the haptic force is at least a vibration caused by rotating eccentric mass.

With respect to claim 52 Ozaka discloses a controller (reaction force control section 1 in FIG. 1; paragraph [0020]) separate from a host computer 110, coupled to the sensor and the actuator and configured to receive host commands from the host computer and a button detection section 116 and locative detection section 114. While Ozaka does not disclose that the controller 1 and motion detection section comprise a microprocessor, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the functions assigned to the above can be implemented in any known method, be it a microprocessor or programmable logic array, without bringing about any unexpected result or performing undue experimentation.

As pertaining to claim 53, Ozaka teaches the device being a mouse whereby the sensor includes a ball 104 that is configured to frictionally contact a surface on which the housing is moved, the surface being associated with the X-Y plane (FIGS. 2 and 16; paragraph [0008]).

As pertaining to claim 54, the sensor includes an optical sensor (122 and 123 in FIG. 16; paragraph [0008]) configured to detect a movement of a surface relative to the mouse housing (inherently).

As pertaining to claim 55, the actuator taught by Ozaka is a DC motor and as such is known to be able to rotate in two directions, namely clockwise and anticlockwise, depending on polarity of voltage applied, and therefore it would not be a burden to anyone to cause the eccentric mass to rotate in two direction for whatever purposes one decides.

As pertaining to claims 85, 87, 88, 95, 97 and 98, the interface device, mouse, further comprises a movable portion (buttons 101, 102) and a base portion (housing 100), wherein the moveable portion is configured to be moveable with respect to the base portion and is graspable by the user.

6. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozaka in view of Aarts et al., (Aarts), US 6,411,280.

Ozaka does not disclose the actuator configured to rotate the eccentric mass approximately in at least one of X-Z plane and Y-Z plane.

Aarts teaches input devices with tactile feedback provided by rotating eccentric mass in approximately at least one of X-Z plane and Y-Z plane (FIG. 2).

It would have been obvious to one of ordinary skill in the art at the time when the invention was made that in order to provide the feedback based device taught by Ozaka one can use the actuators provided by Aarts, i.e. rotating in various planes, without unexpected result or undue experimentation.

7. Claims 104, 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmdahl et al., ("Holmdahl"), US 6,452,586 in view of Ozaka.

With respect to claims 104 and 113 Holmdahl discloses an interface device for use with a computer device comprising a housing 100 (FIGS. 2 and 4) having a movable portion (buttons

102 and 104) and a base portion 120, wherein the movable portion is movable with respect to the base portion; a sensor (sensing means; col. 4, lines 12-20) coupled to the housing and configured to output a sensor signal to the computer device based on a manipulation of the housing by a user; and an actuator (striking mechanism 134 and strike plate 162) coupled to the movable portion of the housing to output a haptic force to the moveable portion in response to an actuating signal from the computer device.

Holmdahl does not teach the actuator being an eccentric mass producing an inertial haptic force.

Ozaka in the same field of endeavor teaches use of an eccentric mass for producing an inertial haptic force, and therefore in view of Ozaka it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the striking actuator of Holmdahl can be replaced by a rotating eccentric mass in order to produce the required feedback to a user, and that this replacement would not require undue experimentation or will produce an unexpected result, in other words, would not lead to an inventive step or constitute a novel concept.

As pertaining to claims 106 and 107, the movable portion is a button and is capable to be grasped by a user.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (571) 272-7687. The examiner can normally be reached on M-F (9:00-5:00).

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander Eisen
Primary Examiner
Art Unit 2629

29 January 2007